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Remarks

In view of the following discussion, the Applicant submits that none of the claims now pending in the application are non-enabling, anticipated, or obvious under the respective provisions of 35 U.S.C. § 112, §102, and §103. Thus, the Applicant believes that all of these claims are now in allowable form. Applicant also believes that any alleged deficiencies in the specification and/or drawings have been satisfactorily corrected in this Response.

It is to be understood that the Applicant, does not acquiesce to the Examiner's characterizations of the art of record or to Applicant's subject matter recited in the pending claims. Further, Applicant is not acquiescing to the Examiner's statements as to the applicability of the prior art of record to the pending claims by filing this Response.

Applicant would like to thank Examiner Chad Zhong for providing the Applicant with the opportunity to discuss the merits of the case during the July 9, 2004 telephone interview as the Applicant is aware of the time constraints placed on the Examiner for processing the subject application. This response provides amended claim language in accordance with the content of the July 9, 2004 telephone interview as well as providing clarifying arguments with respect to as of yet unresolved prosecution issues.

Rejections

Rejections of claims under 35 U.S.C. § 102

The Examiner has rejected claims 2, 3, 4 and 7 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Number 6,658,010 issued December 2, 2003 to Enns et al. (hereinafter "Enns"). Specifically, the Examiner offers numerous portions of Enns to indicate teachings of various claimed features in claims 2, 3,

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4 and 7 of the subject invention. Additionally, at paragraph 17 of the Examiner's final office action, he offered that Enns mentions load balancing in the upstream direction; however, the same method can be applied to downstream as well. He offers that the terms upstream and downstream can be used interchangeably for those skilled in the art because the terminology is relative to the devices and the perspective from which one takes when viewing the devices.

In response Applicant has hereinabove amended claims 2, 3, 5, 7 and 8 to more clearly recite that which Applicant considers the invention. Specifically, in each of the above-identified amended claims, appropriate terminology or phrasing has been added so as to convey a proper frame of reference for the terms downlink channel and the overall concept of downstream channel load balancing. That is, information or data is sent from a source or transmitter in the subject invention and is conveyed to a group of devices or end point via a downlink channel. Accordingly, there should be no confusion as to the intended direction of the information with respect to the terminology downlink or downstream. Support for these amendments can be found at various locations in the subject application including but not limited to Page 2, lines 9-11; Page 3, lines 6-9; no new matter has been entered. For example, claim 2 currently recites and

2. A method for use in a transmitter, the method comprising the steps of:
 - using a downlink channel to convey information to a group of devices; and
 - load balancing the downlink channel; wherein the downlink channel comprises a sequence of dwells, each dwell having a time period, and wherein the method further comprises the step of detecting that at least one dwell of the sequence conveys more downlink information than the other dwells of the sequence as a prerequisite to performing the load balancing step.

Since a downlink channel is being used to convey information from a transmitter to a group of endpoint devices, it is respectfully submitted that there can be no ambiguity as to how to interpret the subject invention. Additionally, regardless of

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one's perspective in a system, it is clearly understood by the current recitation of claims that downlink refers to information that moves from a source to an endpoint. Similar phraseology has been added to claims 3, 5, 7 and 8 to clearly identify downlink communications channels and the aspect of downstream load balancing in those claims as well. As such, it is respectfully submitted that the cited teachings of Enns identified by the Examiner still do not put the subject invention in the hands of one skilled in the art.

In further detail, the Examiner offers Col 4, lines 24-40. Applicant replies that this section speaks generally of what Enns' system does (and does include the phrase "load balancing") but does not specifically say that this is for balancing the downlink channel in the manner claimed (i.e. limitations of dwells and the detection of at least one dwell conveying more information than other dwells). The Examiner offers Col 12, line 12. Applicant replies that this section was previously argued in the March 24, 2004 response and the logic still applies. Specifically, the teachings are deficient as upstream components and aspects of Enns are discussed in the section with no mention of downstream channel activity as claimed. The Examiner offers Col 20, lines 10-15. Applicant replies that this section is similar to the above offered deficient teachings (i.e., it is discussing upstream channels). The Examiner offers Col. 12, lines 11-25. Applicant replies that this section is speaking entirely about managing upstream channel transmissions from remote devices 72 and 74 to the network management system controlling said devices. As discussed previously, any upstream-based teachings are deficient with respect to the teachings of the subject invention.

The Examiner offers Col. 13, lines 33-47. Applicant replies that this passage discusses error checking based on signal failure or degradation in the downstream channel, but does not provide any specific teachings or disclosure for managing load balancing in response to said error checking subroutines or signal loss. The Examiner offers Col. 20, lines 10-17. Applicant replies that again this passage is with regard to upstream frequencies emanating from the

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endpoint remote device towards the network management system. Accordingly, it cannot read upon the current claims which provide for downstream communication and load balancing management.

The Examiner also offers Col. 20, lines 28-42. Applicant replies that this passage was previously offered by the Examiner and explained by the Applicant as being deficient in its teachings because it discusses steps for configuring the remote device prior to the actual upstream and downstream communications initiating. Understandably, some information is passed in the downstream channel during this process; however, there still remains no specific teaching or disclosure of load balancing in a specific downstream channel during the configuration process in the cited passage. Specifically, the cited passage is geared more towards the process of determining which specific downstream channel the remote device should be tuned to and determining the communication data rate based on subscriber equipment.

Examiner offers Col 14, lines 27-36 with respect to claim 3. Applicant replies that this issue has been addressed at the top of page 8 of the March 24, 2004 response. Specifically, the cited reference is providing discussion of load balancing over a group of channels and not within a single channel as claimed.

As such, claims 2, 3, 4, and 7 are not anticipated by Enns and fully satisfy the requirements under 35 U.S.C. § 102. Since Applicant believes these claims to be patentable Applicants respectfully request withdrawal of the rejection.

Rejection of Claims under 35 U.S.C. § 103

The Examiner has rejected claims 5, 8 and 9 under 35 U.S.C. § 103 as being obvious and unpatentable over Enns in further view of "Official Notice". Specifically, the Examiner offers that Enns does not teach the concept of every other timeslot; however, the Examiner is taking official notice that the aspects of every other timeslot is notoriously well known in half duplex systems. Similar official notice is given with respect to claim 8 wherein Enns does not teach a


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memory for storing data for transmission to a group of N-wireless N-points; however, the Examiner gives official notice that a memory is notoriously well known for storing data in a system. The rejection in totality is respectfully traversed.

It has been above argued and presented that Enns does not form the basis for an adequate rejection under the anticipation statute in that it does not disclose adequate teachings of downlink/downstream channel load balancing as currently claimed. Further, Applicant clarifies that the teaching of Enns discusses "channel balancing" amongst a group of multiple channels as identified in Col. 4, lines 3-35. This is further substantiated at Col. 16, lines 7-9 (which was cited in part by the Examiner). Specifically, "samples are collected and periodically the quality of unused channels are compared to the noise floor on channels which are currently assigned to other upstream ports". During the July 9, 2004 telephone interview, the Examiner offered the logic that load balancing amongst a plurality of dwells or time slots within a single channel (as described and claimed in the subject invention) is akin to load balancing a group of channels of a single cable (that is part of a transmission system of Enns).

While the claims must be interpreted as broadly as possible, they must also be read in light of the specification. In this particular instance, the word channel is distinctly defined (as identified earlier) as a medium by which an access point is linked to a group of end points (wireless modems) which allows said group of end points to communicate with the access point in a shared (via the dwells of time slots) manner ^{within the channel} (page 3, lines 25-30). In comparison, it is respectfully submitted that Enns is teaching monitoring of different channels in upstream communication links rather than monitoring downlink channel information rates. The cable that the Examiner refers to contains a plurality of physical channels that can carry information without respect to a time shared aspect within each channel. That is, the Examiner is attempting to expand the language of the claim a level of order or hierarchy further up the system than is necessary or desirable. One skilled in the art realizes that moving between time



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slots of a single channel is distinctly different from moving from a first channel to a different channel in a larger pipeline or cable frame of reference. The cable that the Examiner refers to maybe for instance the frame relay T1/E1 network between the wireless hub in base station 315 and the private IP network switching center 330 or perhaps the L2TP connection between private IP network firewall 335 and the public IP network or backbone as identified in FIG. 1 of the subject invention. That is, information within these (pipelines) may jump from one physical channel to another; however, this is not the same as moving or balancing information between timeslots of a single channel (for instance downlink channel 312 between an access point of base station 315 and one of the wireless modems 310n of FIG. 3). Therefore, Enns in combination with Official Notice or any other secondary cited art which allegedly introduces additional features of the subject invention, but still does not address the missing elements in Enns, does not result in the claimed invention.

As discussed earlier in the prosecution history, independent claim 3 recites detecting an imbalance such that some of the time slots convey more data than other time slots in a single communication channel and subsequently shifting some of the data from at least one time slot to another time slot for reducing the detected imbalance. Any attempted combination of Enns and Official Notice or a secondary reference results in a method and apparatus that monitors and or moves information between different channels; therefore, the combination will not work or perform the tasks intended by the subject invention. Additional independent claims 5, 7, 8, and 9 have similar limitations to that of claim 3.

Applicant notes that two of the three basic criteria to establish the *prima facie* case of obviousness is that first, there must be some suggestion or motivation to modify the reference or combine the teachings. Second, there must be reasonable expectation of success. MPEP 706.02(j). It is respectfully submitted that the Examiner's offered motivation is insubstantial to support the rejection. That is, while the reference does discuss load balancing, it has been

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offered above that a load balancing in Enns is different than load balancing in the subject application (with respect to inter-channel vs. intra-channel load balancing). This was discussed in Applicant's prior Response at Page 9 with respect to the combination of Enns and Kronz. Kronz is no longer being used as a reference to assert the obviousness rejection; therefore, there must be some validity to this very same argument when faced with Enns coupled only with "Official Notice" or the Examiner's additionally offered position regarding the similarities of a cable having many channels and a single channel having many dwells. With said inconsistencies in the cited reference and Examiner's interview offering, there is an insubstantial motivation to combine. It is also respectfully submitted that there is not a reasonable expectation of success that this new combination will result in the subject invention. Different types of load balancing are presented; therefore, it is simply not known if the combination will work properly to yield the desired result.

As such, Applicants submit that claims 8 and 9 are not obvious and fully satisfy the requirements under 35 U.S.C. § 103 and are patentable thereunder. Therefore, the Applicants respectfully request that the rejection be withdrawn.

CONCLUSION

Thus, the Applicants submit that claims 2, 3-5, 7-9 are in condition for allowance. Accordingly, reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application,

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it is requested that the Examiner telephone Mr. Eamon J. Wall at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

July 21, 2004

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